

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1-33. (Canceled)

34. (New) An aeration/backwash device configured for use with a membrane filtration module comprising one or more membranes and opposing potted ends, comprising:

a communication chamber defined by a peripheral wall that at least partially surrounds a portion of the circumference of the membrane filtration module, the peripheral wall having through-openings spaced circumferentially, and each through-opening having a longitudinal axis substantially perpendicular to the one or more membranes;

a source of gas in fluid communication with the communication chamber; and

a source of backwash liquid in fluid communication with the communication chamber.

35. (New) The aeration/backwash device according to claim 34, wherein the through-openings are configured to allow selective fluid communication of the gas and backwash liquid between the communication chamber and the membrane filtration module through the same through-openings.

36. (New) The aeration/backwash device according to claim 34, wherein the through-openings are vertically spaced upper and lower through-openings and configured to allow the gas to fluidly communicate through at least the upper through-openings and to allow the backwash liquid to fluidly communicate through the lower through-openings.

37. (New) The aeration/backwash device according to claim 36, wherein the upper and

lower through-openings are configured to allow the backwash liquid or a source of feed liquid in fluid communication with the communication chamber to fluidly communicate from the communication chamber to the membrane filtration module through the lower through-openings or through the upper and lower through-openings.

38. (New) The aeration/backwash device according to claim 37, wherein the upper and lower through-openings are configured to allow the backwash or feed liquid to fluidly communicate from the membrane filtration module to the communication chamber through the lower through-openings or through the upper and lower through-openings.

39. (New) The aeration/backwash device according to claim 34, wherein the through-openings are vertically spaced into upper and lower through-openings.

40. (New) The aeration/backwash device according to claim 39, wherein the upper through-openings are smaller than the lower through-openings.

41. (New) The aeration/backwash device according to claim 39, wherein each set of through-openings are axially spaced around the periphery of the chamber.

42. (New) The aeration/backwash device according to claim 39, wherein both the upper and lower through-openings are configured to allow the backwash liquid to fluidly communicate from the membrane filtration module to the communication chamber or from the communication chamber to the membrane filtration module.

43. (New) The aeration/backwash device according to claim 34, wherein the device is formed as an annulus.

44. (New) A porous membrane filtration module comprising:
an upper and lower header vertically spaced from each other;
one or more membranes having a permeable wall and an upper and lower end

extending longitudinally between the upper and lower headers, into which the ends of the one or more membranes are potted,

wherein at least one of the upper or lower ends of the membranes is in fluid communication with the upper or lower header, and the permeable wall is configured to allow feed containing contaminant matter to be applied to one side of the wall and to allow filtrate to be withdrawn from the other side of the wall;

at least one filtrate collection chamber in fluid communication with at least one of the upper and lower header; and

an aeration/backwash device comprising:

a communication chamber defined by a peripheral wall that at least partially surrounds a portion of the circumference of the membrane filtration module, the peripheral wall having through-openings spaced circumferentially, and each through-opening having a longitudinal axis substantially perpendicular to the one or more membranes;

a source of gas in fluid communication with the communication chamber; and

a source of backwash liquid in fluid communication with the communication chamber.

45. (New) The porous membrane filtration module according to claim 44, wherein the through-openings are vertically spaced upper and lower through-openings and configured to allow the gas to fluidly communicate through at least the upper through-openings and to allow the backwash liquid to fluidly communicate through the lower through-openings.

46. (New) The porous membrane filtration module according to claim 44, further comprising a filtrate connection pipe in fluid communication with and configured to withdraw filtrate from the at least one filtrate collection chamber.

47. (New) The porous membrane filtration module according to claim 44, wherein

the aeration/backwash device is located adjacent the lower header.

48. (New) The porous membrane filtration module according to claim 44, wherein the at least one filtrate collection chamber further comprises at least one collection cup adapted to detachably receive and engage in a fluid-tight manner with the upper or lower header.

49. (New) The porous membrane filtration module according to claim 48, wherein the upper or lower header is engaged with the at least one collection cup by means of a bayonet-type fitting.

50. (New) The porous membrane filtration module according to claim 44, further comprising a screen that at least partially surrounds the one or more membranes.

51. (New) The porous membrane filtration module according to claim 50, wherein the screen is a sleeve which extends along part of the length of the one or more membranes.

52. (New) The porous membrane filtration module according to claim 50, wherein the screen is solid.

53. (New) The porous membrane filtration module according to claim 50, wherein the screen is located above the aeration/backwash device.

54. (New) The porous membrane filtration module according to claim 52, wherein the screen extends along the full length of the membrane filtration module and comprises one or more openings adjacent the through-openings of the aeration/backwash device to allow communication with the membranes and one or more additional openings at or adjacent a top of the module and configured to allow flow of a gas or a liquid therethrough.

55. (New) The porous membrane filtration module according to claim 54, having one or more further openings in the screen at or adjacent the aeration/backwash device and configured to allow bypass of a backwash flow.

56. (New) A membrane filtration system comprising:

- at least one membrane filtration module comprising one or more membranes and opposing potted ends;

- a feed tank in fluid communication with the at least one membrane filtration module;

- at least one filtrate manifold in fluid communication with the at least one membrane filtration module and a source of filtrate;

- at least one aeration/backwash device comprising:

- a communication chamber defined by a peripheral wall that at least partially surrounds a portion of the circumference of the at least one membrane filtration module, the peripheral wall having through-openings spaced circumferentially, and each through-opening having a longitudinal axis substantially perpendicular to the one or more membranes; and

- a source of gas in fluid communication with the communication chamber;

- at least one aeration/backwash manifold in fluid communication with the aeration/backwash device; and

- a source of backwash liquid in fluid communication with the aeration/backwash manifold.

57. (New) The membrane filtration system according to claim 56, wherein the source of gas is in fluid communication with the at least one aeration/backwash manifold.

58. (New) The membrane filtration system according to claim 56, further comprising at least one gas manifold in fluid communication with the at least one aeration/backwash device.

59. (New) The membrane filtration system according to claim 58, wherein the source of gas is in fluid communication with the at least one gas manifold.

60. (New) The membrane filtration system according to claim 56, wherein the at least one filtrate and aeration/backwash manifolds are arranged along a bottom of the feed tank.

61. (New) The membrane filtration system according to claim 56, wherein the at least one filtrate and aeration/backwash manifolds are installed near a base of the at least one membrane filtration module.

62. (New) The membrane filtration system according to claim 56, wherein the at least one aeration/backwash device is formed as an annulus that surrounds a base of the at least one filtration module.

63. (New) The membrane filtration system according to claim 56, wherein the through-openings are vertically spaced upper and lower through-openings and configured to allow the gas to fluidly communicate through at least the upper through-openings and to allow the backwash liquid to fluidly communicate through the lower through-openings.

64. (New) The membrane filtration system according to claim 63, wherein the lower through-openings are in fluid communication with a source of feed liquid.

65. (New) The membrane filtration system according to claim 63, wherein each set of through-openings are axially spaced around the periphery of the chamber.

66. (New) The membrane filtration system according to claim 56, wherein the source of filtrate is fluidly communicated to the at least one filtrate manifold from a top or a bottom of the at least one membrane filtration module.